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WORLD TRADE IN CROCODILIAN SKINS, 1997-1999

Prepared under contract to the International
Alligator and Crocodile Trade Study

by the

UNEP World Conservation Monitoring Centre

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Introduction

The data used in this report have been obtained from the *CITES Trade Database* which UNEP-WCMC maintains on behalf of the CITES Secretariat, with additional data provided by the Crocodile Farmers Association of Zimbabwe.

WCMC has previously produced seven reports for the International Alligator and Crocodile Trade Study that examined the international trade in crocodylian skins from 1980 to 1998. The present report is intended to update these reports by analysis of information for the years 1997 to 1999. It also attempts to identify problem areas and to recommend, where possible, workable solutions.

As in the IACTS report for 2000, this report presents information on trade levels in both classic skins (alligators and true crocodiles) and caimans.

Methods

This report is based on an analysis of the annual reports submitted by the Parties to CITES for all years up to 1999. A list of annual reports for 1997-1999 that had been received at UNEP-WCMC at the time of writing is given in Table 1. In order to be comparable with previous IACTS reports, all trade in whole skins and sides of crocodylian species has been analyzed. Two sides are considered to be equivalent to one skin. Trade reported in units of weight, area, length or sub-units of skins such as 'tails' has been mainly excluded. Wherever possible, data reported by the producer countries have been used in preference to that reported by importing countries as discrepancies in the manner of reporting, or the time lag between export and import, may lead to double-counting and thus to an overestimation of trade volume. However where producer countries have failed to submit annual report data on exports of crocodylians, importer's data have been used. As with the previous reports covering the years 1995-1998, re-export trade has not been included in the estimation of annual production.

Limitations of data

Although the deadline for submission of CITES annual reports is the 31st of October of the year following that in which the trade took place, continued failure of countries to submit their reports in a timely fashion remains the greatest single obstacle in conducting trade analyses. This was highlighted in a report produced by WCMC and presented to the eleventh meeting of the Conference of the Parties to CITES, held in Gigiri, Kenya, in April 2000 as an annex to the Secretariat's report on national reports as required under Article VIII, paragraph 7(a), of the Convention.

In response to that document, the Parties to CITES decided that trade should be suspended in CITES-listed species with those Parties that had, without adequate justification, failed to report for three consecutive years within the deadline established in Resolution Conf. 11.17. As a result, several Parties provided their missing annual reports and in addition, UNEP-WCMC was granted access to export permits sent by Parties to the CITES Secretariat for confirmation of their validity.

As noted in previous IACTS reports, a further problem with annual reports is the basis on which they are compiled. CITES Notification to the Parties No. 1999/85 states that "As far as possible, the data in the report should record the actual trade that took place, i.e. the quantity of specimens that entered or left the country. If it is not possible to report the actual exports and re-exports, the data on such trade should come from each permit and certificate issued. The report should state clearly whether the data used for the records of imports and exports/re-exports are based on permits/certificates issued or on actual trade."

However, reporting simply on the basis of permits issued may lead to considerable overestimates of trade volume as permits are frequently issued for quantities in excess of those actually traded and indeed, some of the permits may not even be used. The majority of Parties still fail to provide any details concerning the basis on which their annual reports are compiled.

All annual reports for the years up to 1999 should have been submitted by 31 October 2000 but, at the time of writing (June 2001), several reports that should contain important crocodilian trade data have still not been submitted. These include Guyana (most of 1999), Israel (1997, 1998 and 1999), Madagascar (1999), Malawi (1997 and 1998), Suriname (1997 and 1998), Thailand (1998 and 1999), Uganda (1997, 1998 and 1999) and Zambia (1997) amongst the producer countries, and Canada (1998 and 1999) and Japan (1998 and 1999) amongst the major consumers. The potential effect of such omissions has been commented upon during the analysis.

Table 1. CITES annual reports for 1997-1999 available for analysis

Country	1997	1998	1999
Algeria			*
Argentina	*	*	*
Australia	*	*	*
Austria	*	*	*
Bahamas			*
Barbados	*	*	*
Belgium	*	*	*
Belarus	*		*
Belize	*	*	*
Benin	*	*	*
Bermuda	*	*	
Bolivia	*	*	*
Botswana	*	*	*
Brazil	*	*	*
British Virgin Islands	*	*	
Brunei Darussalam	*	*	*
Bulgaria		*	*
Cameroon	*	*	*
Canada	*		
Cayman Is	*	*	
Chad			*
Chile	*	*	*
China	*	*	*
Colombia	*	*	*
Congo			*
Costa Rica	*	*	*
Côte d'Ivoire	*	*	*
Cuba	*	*	*
Cyprus	*	*	*
Czech Republic	*	*	*
Democratic Republic of the Congo	*	*	*
Denmark	*	*	*
Dominican Republic	*	*	*
Ecuador	*		

Country	1997	1998	1999
Egypt	*	*	*
El Salvador	*	*	*
Estonia	*	*	*
Ethiopia	*	*	*
Falkland Islands	*	*	
Finland	*	*	*
France	*	*	*
French Polynesia	*	*	
Gabon			*
Gambia	*	*	*
Germany	*	*	*
Ghana	*	*	*
Gibraltar		*	
Greece	*	*	*
Greenland	*	*	*
Guadeloupe	*		
Guatemala	*	*	*
Guinea		*	*
Guyana	*	*	part
Honduras	*	*	*
Hong Kong	*	*	*
Hungary	*	*	*
India	*	*	*
Indonesia	*	*	*
Iran	*	*	*
Ireland (non-Party)	*	*	*
Italy	*	*	*
Jamaica		*	
Japan	*		
Jordan	*	*	*
Kazakhstan	*	*	
Kenya	*	*	*
Latvia	*	*	
Liechtenstein	*	*	*
Luxembourg	*	*	*
Macao			*
Madagascar	*	*	
Malawi			*
Malaysia	*	*	*
Mali	*	*	*
Malta	*	*	*
Martinique	*		
Mauritius	*	*	
Mexico	*	*	*
Monaco	*	*	*
Mongolia	*	*	*
Morocco	*	*	*
Mozambique	*	*	*
Namibia	*	*	*
Nepal	*	*	*
Netherlands	*	*	*

Country	1997	1998	1999
New Caledonia	*	*	*
New Zealand	*	*	*
Nicaragua	*	*	*
Nigeria	*	*	
Norway	*	*	*
Pakistan	*	*	*
Panama			*
Papua New Guinea	*	*	*
Paraguay	*	*	*
Peru	*	*	
Philippines	*	*	*
Poland	*	*	*
Portugal	*	*	*
Republic of Korea	*	*	*
Réunion	*		
Romania		*	*
Russian Federation	*	*	*
Senegal		*	*
Seychelles	*	*	*
Sierra Leone	*	*	*
Singapore	*	*	*
Slovakia	*	*	
South Africa	*	*	*
Spain	*	*	*
Sri Lanka		*	*
Sudan	*		*
Suriname			*
Sweden	*	*	*
Switzerland	*	*	*
Tanzania	*	*	*
Thailand	*		
Togo		*	*
Trinidad and Tobago	*	*	*
Tunisia	*	*	*
Turkey	*	*	*
Turks and Caicos	*		
Ukraine	*	*	
United Arab Emirates	*	*	
United Kingdom	*	*	*
United Republic of Tanzania	*	*	*
Uruguay	*	*	*
United States of America	*	*	*
Uzbekistan		*	*
Venezuela	*	*	*
Vietnam		*	*
Zambia		*	*
Zimbabwe	*	*	*

part = partial report

Accuracy of the data is another limitation of CITES annual reports. For example, during the compilation of the IACTS 2000 report it was discovered that many alligator skins were reported as live animals in the 1996 and 1997 annual reports of the United States of America and thus led to an underestimate of skin exports. Similarly, reporting, by the same country, of flanks, tails and skin pieces as whole skins could lead to a drastic overestimate of trade volume. In addition, the annual reports of Zimbabwe record significantly different trade volumes to those reported by the Crocodile Farmers Association of that country.

Species accounts

Crocodylus acutus American Crocodile

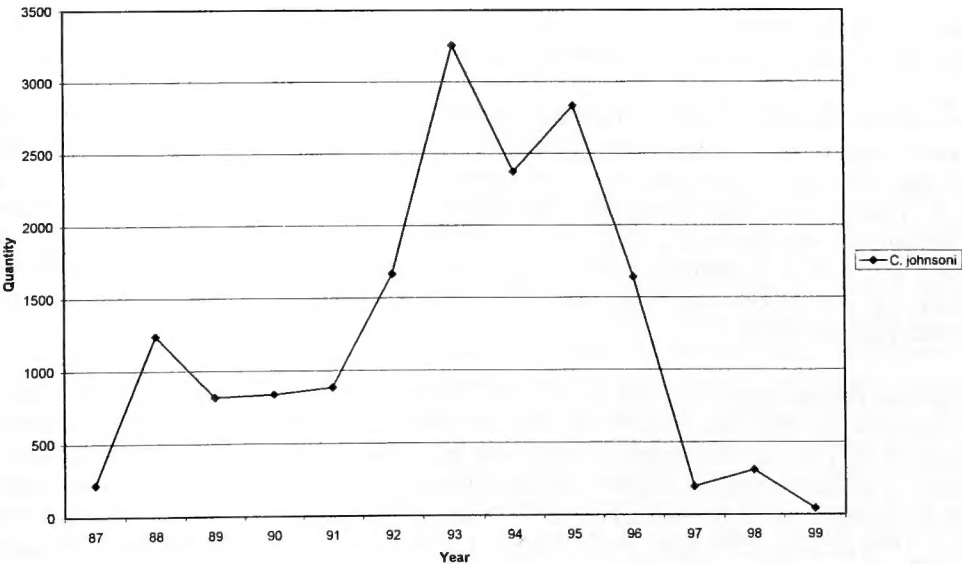
There has been no reported trade in *Crocodylus acutus* since 1989.

Crocodylus cataphractus African Sharp-nosed Crocodile

The only recently reported transaction involving *Crocodylus cataphractus* was a seizure in 1998 reported by the United States of America, of two skins of unknown origin, imported from Egypt.

Crocodylus johnsoni Australian Freshwater Crocodile

Figure 1. Australian exports of *Crocodylus johnsoni*



As shown in Figure 1, exports of this species from Australia increased from around 1000 skins between 1987 and 1991, then increased sharply to 3255 in 1993. Exports remained high in 1994 and 1995 but have since fallen sharply. Australia reported exporting less than 50 skins in 1999.

Crocodylus moreletii Morelet's Crocodile

In 1997, Mexico reported exporting 70 skins to France, 44 skins to Italy and 30 skins to Panama, plus one each to Brazil and Switzerland. For 1998, reported exports were 166 skins to France and 27 to Hong Kong but in 1999 only two skins were exported. Of the 30 skins exported to Panama in 1997, 20 were re-imported that same year and the remainder in 1998 (see also the section on meat).

Crocodylus niloticus Nile Crocodile

Nile crocodile skins are reported as whole skins, belly skins, back skins, hornbacks, horn strips, etc., all of which may be reported by the importer as whole skins. This leads to some difficulties in interpreting the data however for the purposes of this report, bellies, skins and hornbacks have been treated as representing entire skins

Exporters

1. Range States

Botswana exported 332 skins to Singapore and 5 skins to Zimbabwe in 1997, all from captive-bred animals. No commercial exports of skins were reported in 1998 or 1999, the only trade being in live animals.

Ethiopia has not reported exports of skins since 1995 when 2005 skins of ranched animals were reported as an export to Singapore.

Guinea has not reported exporting skins since 1991 nor have there been any reported imports from that country. Spain reported seizing 100 skins from Guinea in 1995.

Kenya reported exporting a total of 1445 belly skins to France, Italy and Singapore in 1997. Of these 120 were reported as being from wild specimens and the remainder from ranched animals. In 1998 Kenya reported exporting 400 belly skins (200 ranched, 200 captive-bred) and 200 back skins (captive-bred) to France. France reported importing 400 skins from captive-bred animals and it seems likely that only 400 animals were involved in these exports. In 1999 Kenya reported exporting a total of 3350 skins of which 550 went to Colombia, 1250 to France, 1000 to Singapore and 550 to the United States of America. Reported imports were fewer and it is possible that the quantities reported by Kenya included both backskins and bellies.

Madagascar reported exporting 5464 skins in 1997 and 6520 in 1998, the main importers being France and Singapore in 1997 and France and Italy in 1998. No annual report has been received from Madagascar for 1999 and the reports of France and Italy show imports of 4302 skins from that country. This may be an underestimate as exports had been increasing by around 1000 skins each year since 1995. All of the exports reported by Madagascar in 1997 were of ranched or captive-bred animals, however the total for 1998 included 2263 skins of wild origin. Tunisia reported importing 400 skins of captive-bred animals in 1998 but these were not reported by Madagascar.

Malawi has not submitted reports for 1997 or 1998 but data from France, Germany and Japan indicate imports of 600 skins in 1997 and from France of 200 skins in 1998. Japan has not reported for that year so the real quantity may be higher. In 1999 Malawi reported exporting 170 skins to France and the

importer confirmed this. The imports reported by France and Germany in 1997 were of ranched animals but the source of all skins in 1998 and 1999 was given as wild.

Mozambique reported exporting 1430 skins (730 ranched, 700 wild) to Singapore in 1997 and 648 skins to Singapore and 162 to Zimbabwe in 1998, all ranched. In 1999 Mozambique reported exporting 585 skins (403 ranched, 182 wild) to Singapore in 1999. It should be noted that Singapore reported higher quantities in both 1998 and 1999 and it is possible that both hornbacks and bellyskins are being treated as whole skins.

Namibia reported exporting 120 skins in 1997, 53 in 1998 and 115 in 1999 all to South Africa. All were reported to be from captive-bred stock.

South Africa reported exports of 13,322 skins in 1997, 8,863 in 1998 and 26,926 in 1999. The majority of the skins were reported to be from captive-bred stock, with only 578 apparently ranched and 60 wild caught over the three-year period.

The only trade involving **Sudan** since 1992 was the seizure of one skin reported by the United States of America in 1996

Tanzania reported exporting 275 skins to France in 1997, 777 in 1998 and 827 in 1999, all of wild origin.

No imports of skins from **Uganda** have been reported since 1994.

Zambia did not submit a report for 1997 but Singapore reported importing 7302 back skins, 7052 belly skins and 4326 simply as skins and South Africa reported importing a further 600 skins. If the backskins are disregarded it seems likely that a total of around 11978 skins was exported. The Zambian annual reports for 1998 and 1999 show exports of 9,250 skins, mostly to Mexico and Singapore in 1998 and 19,702 in 1999, again mostly to Singapore with smaller quantities going to Brazil, Japan, Mexico, South Africa and the United States of America. Unfortunately Zambia does not report the source of the skins but importers records suggest most are from ranching operations.

In their 1997 report to CITES, **Zimbabwe** reported exporting 52,386 skins, which compares well with the Crocodile Farmers Association of Zimbabwe (CFAZ) figure of 52,829 pieces comprising 6,373 backskins, 789 crust, 5765 hornbacks and 39,902 wet salted belly skins. If however the backskins are discounted, the CITES annual report data overestimates the number of animals involved by around 14 per cent. Data for 1998 are less comparable and suggest possible under-reporting in the CITES annual report. The CFAZ reported exporting 40,720 skins (20 crust, 202 finished skins, 12,564 hornbacks and 27,934 wet-salted belly skins) while the Zimbabwe annual report shows a total export of 21,887 skins. Data from importers falls somewhere in between these two figures at around 33,000 skins. In 1999, the Zimbabwe annual report records that 94,408 skins were exported while CFAZ data suggests the figure was nearer 63,000. Importers' data for 1999 gives a total of 65,000 however no data are available from Japan for either 1998 or 1999. The reason for the great divergence in the figures supplied by CFAZ and the CITES Management Authority (M.A.) is not known but it would seem possible that the M.A. may have included some 1998 data in the 1999 report. This might arise from a time lag between issuance of the export permit and the date of actual export.

In the table below, data on skin production provided by CFAZ, excluding the number of backskins, have been used.

2. Other countries

Brazil reported exporting 1 skin in 1997, 2,092 in 1998 and 720 in 1999, mostly to France, Mexico and the United States of America. These transactions are confirmed by the annual report data provided by the importing countries.

Italy reported importing 944 skins from **Israel** in 1996 and France reported importing 552 in 1999.

Mauritius reported exporting small numbers of skins to Zimbabwe between 1995 and 1998 amounting to just under 200 skins in all. No report has been received from Mauritius for 1999 but the data available from earlier years suggests there is some small level of production there.

Table 2. Reported trade in *Crocodylus niloticus* skins, 1996-1999

Country	1996	1997	1998	1999
Botswana	347	337	0	0
Brazil	14	1	2,082	720
Israel	944*	0	0	552*
Kenya	3,000	1,445	400	3,350
Madagascar	4,589	5,464	6,520	4,302*
Malawi	636	600*	200*	170
Mauritius	60	48	59	0
Mozambique	523	1,430	810	585
Namibia	210	120	53	115
South Africa	>12,500*	13,573	8,845	26,892
Tanzania	1,186	275	777	827
Zambia	5,224	12,238*	9,249	19,702
Zimbabwe	38,295♦	46,456♦	40,720♦	63,064♦
Total	> 67,528	81,987	69,715	120,279

Key: * Figure derived from import data

♦ Data supplied by CFAZ

Crocodylus novaeguineae New Guinea Crocodile

Table 3 shows the total number of skins of this species exported by the main producers of this species, Indonesia and Papua New Guinea, between 1996 and 1999.

In the IACTS report of 2000 it was noted that although the Management Authority of **Papua New Guinea** had provided general crocodylian data, they had consistently failed to include statistics of their crocodylian skin trade in their annual reports to CITES. However in April 2001, maybe in response to the possibility of trade prohibitions under CITES Resolution Conf. 11.17, a detailed breakdown of the trade data for 1997 to 1999 was provided. In 1997, 87 per cent of exports were reported to be from wild-collected animals. This fell to 64 per cent in 1998 and increased to 77 per cent in 1999. As had been surmised in the IACTS report 2000, the majority of the skins were exported to Japan.

The moratorium imposed by **Indonesia** in January 1994 on the export of *Crocodylus novaeguineae* was lifted in 1997. In that year Indonesia reported the export of 100 skins of ranched animals to Japan and in 1998 a total of 8506 skins, also from ranched stock, was exported mainly to Japan and Singapore. Exports in 1999 were slightly lower but the source and destinations remained the same.

Table 3. Reported trade in *Crocodylus novaeguineae* skins, 1996-1999

Country	1996	1997	1998	1999
Indonesia	0	100	8,506	6,574
Papua New Guinea	14,234	32,912	16,985	15,617
Total	14,234	33,012	25,491	22,191

Crocodylus porosus Saltwater Crocodile

Figure 2 shows the estimated quantities of skins exported from the major producing countries, Australia, Indonesia and Papua New Guinea, between 1992 and 1999. Indonesia imposed a moratorium on exports of crocodylian skins in 1994 that was lifted in 1997.

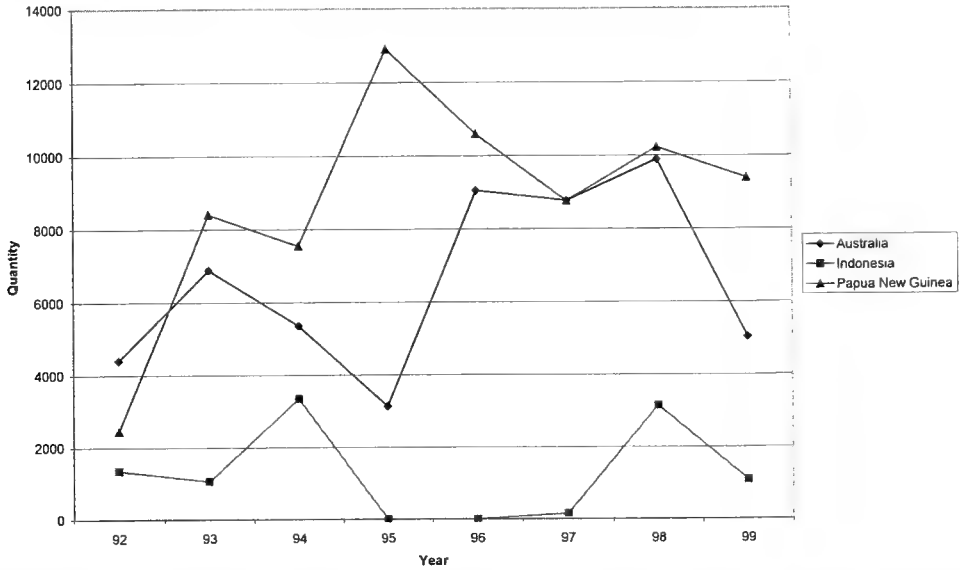
Australia reported exports of 8,792 skins in 1997, a decrease over the previous year. The quantity increased to almost 10,000 in 1998 but fell again to 5,038 in 1999. The reported destinations were mainly France, Japan and Singapore

When the moratorium in **Indonesia** was lifted in 1997, 150 skins from ranched animals were exported to Japan. Exports of a further 3,141 skins, mostly to Singapore, were reported in 1998 and a further 1,087 to Japan and Singapore in 1999. The source of the skins in 1998 was reported as 'F' (animals born in captivity [F1 or subsequent generations] that do not fulfil the definition of 'bred in captivity' in CITES Resolution Conf. 10.16) while those in 1999 were reported to be from ranching operations.

Malaysia reports exporting approximately 120 skins annually to Singapore from a registered captive-breeding operation.

Papua New Guinea reported exporting 8,771 skins in 1997, 10,225 in 1998 and 9,396 in 1999, mostly to Japan. The proportion of skins reported as coming from captive-breeding operations increased from 66 percent in 1997 to 75 per cent in 1998 and to 79 per cent in 1999

Figure 2. Exports of *Crocodylus porosus* from the major producers 1992-1999



Singapore reported commercial exports of 296 skins from registered captive-breeding operations in 1997, 211 in 1998 and 60 in 1999.

Thailand reported exporting 440 skins to Japan in 1997, all being from captive-breeding operations. The quantity exported subsequently cannot be estimated as neither Thailand nor Japan, the main importer, has submitted annual reports for those years.

Table 4. Reported trade in *Crocodylus porosus* skins, 1997-1999

Country	1997	1998	1999
Australia	8,792	9,896	5,038
Indonesia	150	3,141	1,087
Malaysia	120	320	120
Papua New Guinea	8,771	10,255	9,396
Singapore	296	211	60
Thailand	440	?	?
Total	18,376	23,823	15,701

***Crocodylus rhombifer* Cuban Crocodile**

Cuba reported exporting two skins to United Kingdom in 1998 from a registered captive-breeding operation. No further trade has been reported for this species.

***Crocodylus siamensis* Siamese Crocodile**

The only exporter of this species is Thailand who reported exports of 5,452 skins in 1997, mostly to Japan. Neither of these countries has submitted a report for 1998 or 1999 so production can not be estimated for these years. The only reported imports were of one skin by the Czech Republic and five by Hong Kong in 1998 and 104 by Hong Kong and 397 by Singapore in 1999.

***Crocodylus siamensis/porosus* Crocodile Hybrid**

No international trade in skins of this hybrid species has been reported.

***Osteolaemus tetraspis* West African Dwarf Crocodile**

There is no international trade in skins of this species, however seizures of small numbers of manufactured items, mainly emanating from Nigeria, are reported annually. Unfortunately very few of these seizures are reported to species level so it is impossible to estimate the scale of the problem, or even if this species is involved.

***Alligator mississippiensis* American Alligator**

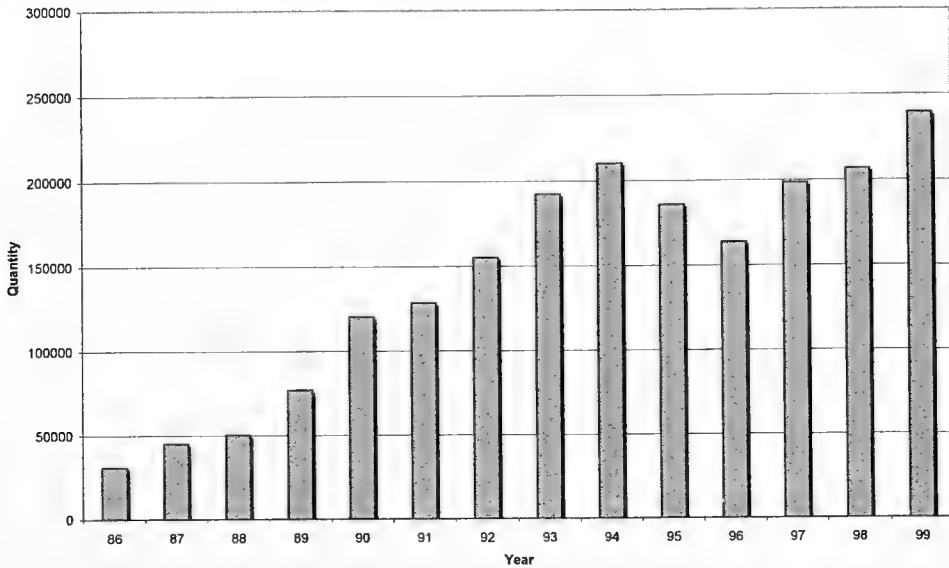
As in the IACTS reports for 1995-1998, only gross export data reported by the United States of America have been used as it has been demonstrated previously that using data reported by importing countries can lead to a significant overestimate of trade volume. A thorough analysis was conducted of trade records concerning exports of live animals between 1996 and 1998 and any transactions that could be confirmed as involving skins rather than live animals were amended in the database.

Figure 3 shows reported exports between 1986 and 1999 and indicates a steady increase from around 30,000 skins in 1986 to 210,000 in 1994. Exports then appear to have declined to around 160,000 in 1996 and have then increased steadily to a peak of almost 240,000 in 1999.

Table 5. Exports of *Alligator mississippiensis* reported by USA 1986-1999

1986	1987	1988	1989	1990	1991	1992
31,235	45,177	50,303	76,963	120,419	128,447	155,264
1993	1994	1995	1996	1997	1998	1999
192,286	210,236	185,929	163,936	198,649	206,620	239,519

Figure 3. Gross exports of *A. mississippiensis* skins from the United States of America 1986-1999



The principal markets for American alligator skins between 1990 and 1999 are shown in Figure 4 and indicates that France was the primary destination over that period. Indeed the sharp decrease in overall exports that occurred in 1996, and the increase thereafter, can be seen to be the result of the trade with France.

Italian imports have fluctuated between 20,000 and 50,000 over the ten-year period and may possibly be set to increase further. Imports by Singapore have been gradually increasing since 1995 while the Japanese market, which represented the destination of 18 per cent of the skins in 1992 now represents a mere 1.4 per cent. Mexico, which used to import less than 1,000 a year up until 1997 now represents over 7 per cent of the market.

The IACTS report for 1995-1997 noted that the proportion of captive-bred animals involved in the trade had regularly fluctuated between 60 per cent and 80 per cent and this was also the case in 1998 and 1999 where the proportion of skins from reportedly captive-bred animals was 66 per cent and 70 per cent respectively. These data are shown in Figure 5. However it is known that the actual proportion of captive-bred material entering trade from Florida is no more than five per cent, and even less from operations in Louisiana. This suggests that the compilers of the CITES annual report of the United States of America are using the code 'C' for ranched animals rather than the more correct 'R'. This code was first used in the annual report of 1998 and in 1999 accounted for less than three per cent of the skins. A further complication introduced in 1999 is the use of the code 'F' (defined earlier) which accounts for seven per cent of the exports. Twenty per cent of the skins exported in 1999 were reported to be of wild origin.

Figure 4. Major importers of American alligator skins 1990-1999

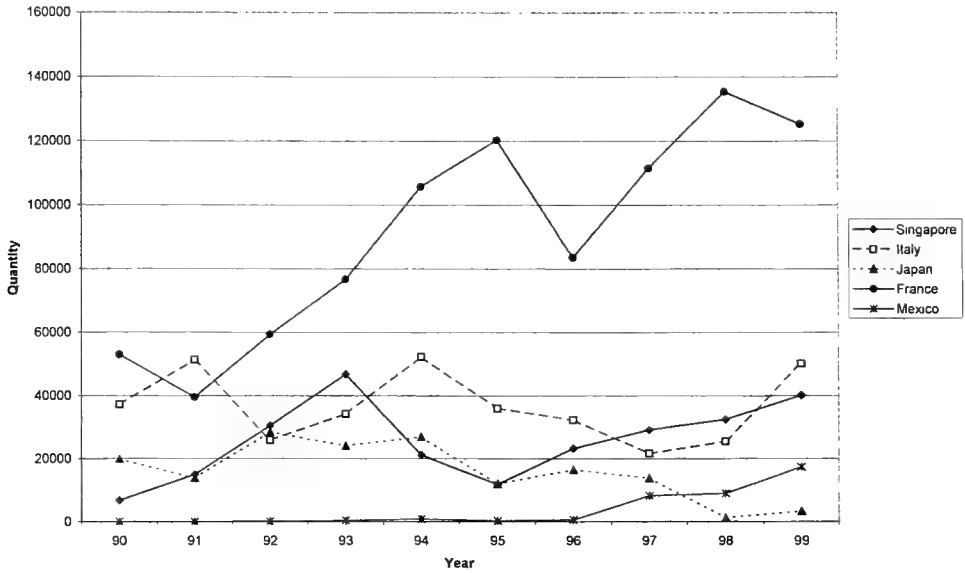
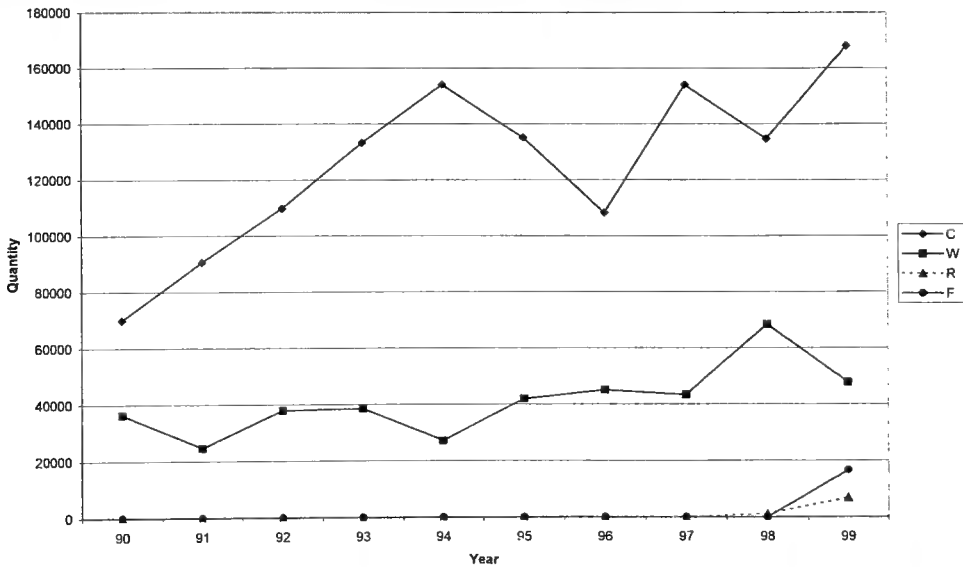


Figure 5. Reported source of American alligator skins 1990-1999

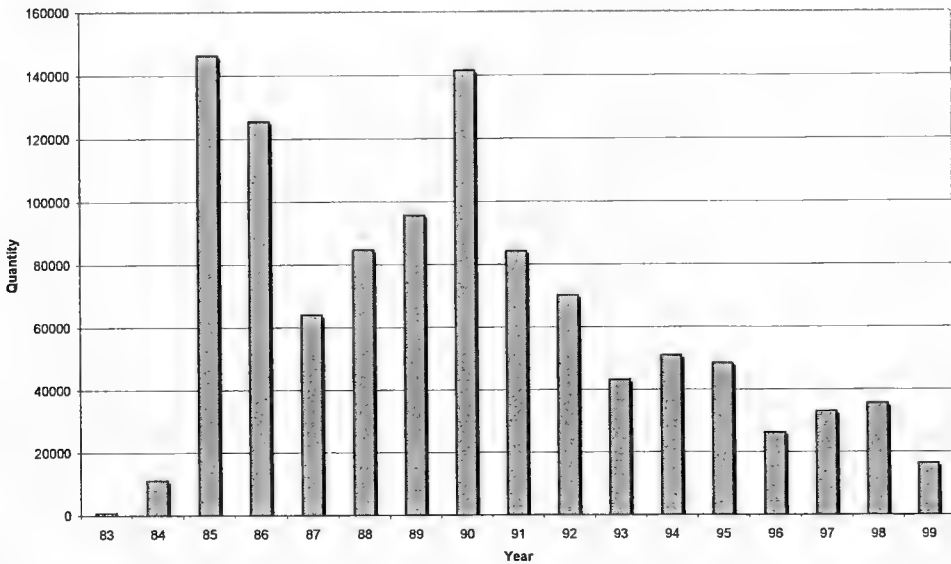


This species is also bred in captivity in Israel. France reported the import of 437 skins in 1996, 210 in 1997, 401 in 1998 and a further 425 skins in 1999. No other importers have recorded trade from this source.

Caiman crocodilus crocodilus Spectacled Caiman

The history of exports of this taxon from South and Central America was described in the IACTS 2000 report which noted that Venezuela was currently the main supplier, exporting over 90 per cent of the *C. crocodilus crocodilus* skins entering trade, most of them being from wild-caught animals. The report also noted that the volume of trade has declined from a peak of over 400,000 in 1985 to less than 30,000 in 1998. This trend continued through 1999 with total exports amounting to fewer than 16,500 skins. The quantity of skins exported annually from Venezuela is shown in Figure x below.

Figure 6. Exports of *Caiman crocodilus crocodilus* skins from Venezuela 1983-1999



It is firmly believed that this decline has resulted from the very high number of skins of *C. crocodilus fuscus* being exported by Colombia.

Caiman crocodilus fuscus Brown Caiman

As with *C. crocodilus crocodilus*, the history of the trade in skins of *C. crocodilus fuscus* was well documented in the IACTS 2000 report which noted that since 1990 the major producer of this species had been Colombia. Exports of this taxon had increased from around 70,000 skins in 1990 to over 760,000 in 1995. Exports declined to only 450,000 in 1997 but increased again to almost 670,000 the following year and again to over 765,000 in 1999. Details of the countries reportedly exporting this species from 1994 to 1999 are shown in Table 6.

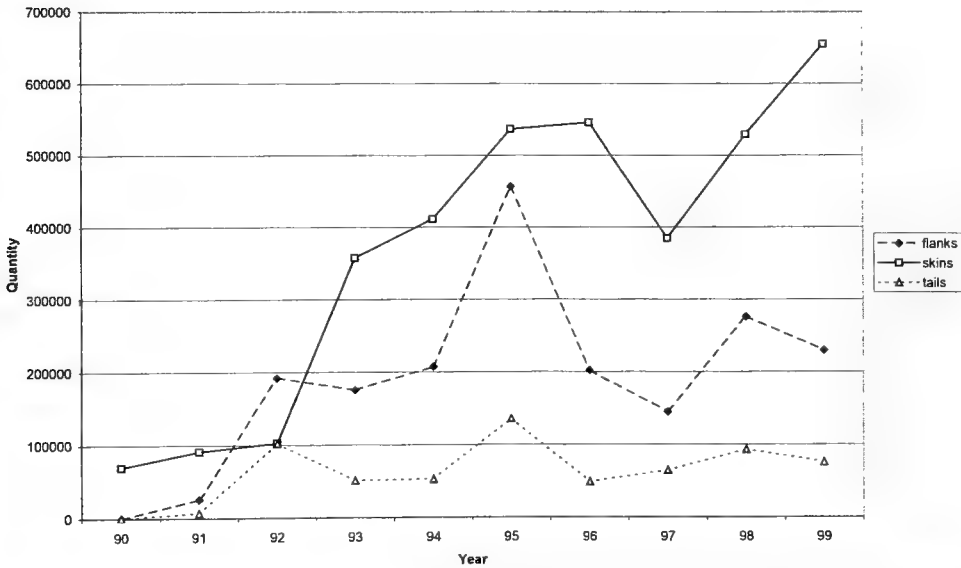
Table 6. Reported trade in *Caiman crocodilus fuscus* skins, 1994-1999

Exporter	1994	1995	1996	1997	1998	1999
Brazil	0	0	0	0	3	0
Colombia	514,792	764,358	646,832	451,307	669,269	767,529
Costa Rica	0	0	0	0	40	0
Cuba	0	12	302	500	5	0
El Salvador	0	1	0	0	0	0
Guatemala	62	0	0	0	0	0
Honduras	0	2,000	5,656	22,000	18,140	0
Nicaragua	8,441	4,328	3,795	1,246	3,927	250
Total	523,295	770,609	656,585	475,053	691,384	767,779

Since the IACTS report 2000 was produced, annual report data for the period 1996 to 2000 has been received from Honduras that shows exports of 45,796 skins and re-exports of 7,486 skins between 1996 and 1998. It is unclear from the annual reports whether the exports reported are indeed true exports or re-exports of skins that have been reported incorrectly. In any event, Honduras reported no trade in this species in either 1999 or 2000.

Colombia exports crocodilian hides in various formats, as flanks, as whole skins and as tails. More recently exports of ‘barrigas’ have been reported. It is believed these are belly skins and in the analysis they have been included with whole skins. Details of the quantities of each format exported annually between 1990 and 1999 are shown in Figure 7.

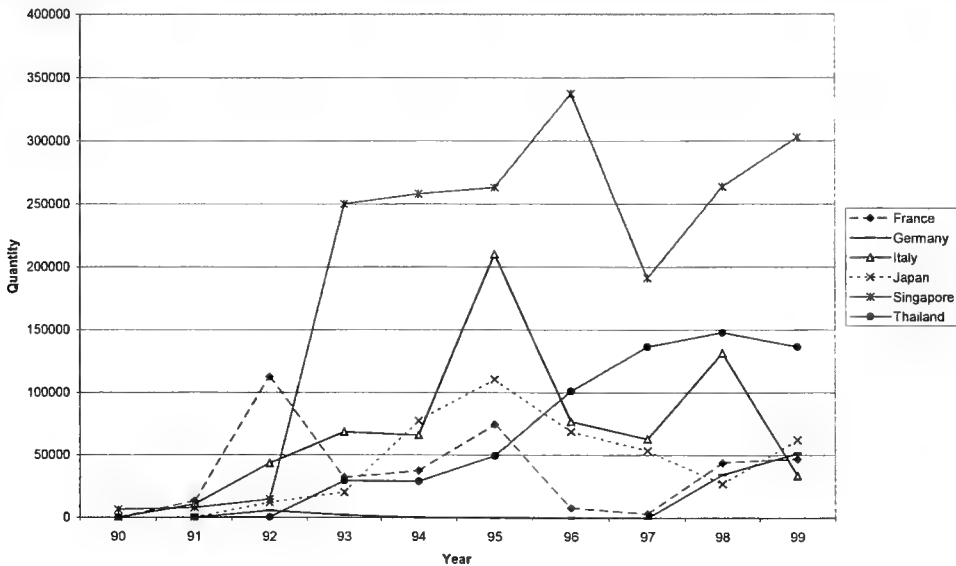
Figure 7. Exports of *Caiman crocodilus fuscus* from Colombia 1990-1999



The export of whole skins increased steadily until 1996, decreased in 1997 but has increased steadily since then. Exports of flanks has averaged around 200,000 each year since 1992 but peaked dramatically in 1995 at just over 456,000. Export of tails shows no dramatic fluctuations.

The major importing countries of Colombia's caiman skin production have been traditionally Italy, Japan and France. However Singapore has been the major destination since 1994 and exports to Thailand have been increasing steadily throughout the 1990s. Thailand has been the second most important destination since 1997. It should be noted that very few flanks are exported to Thailand. Of interest perhaps is the appearance of Germany as an importer in 1998 and 1999. At the present time it is not known whether these imports are for manufacture in Germany or are simply being imported by France and Italy via another European Union member State. It is also interesting to note that the peak of Italian imports coincided with the peak export of flanks.

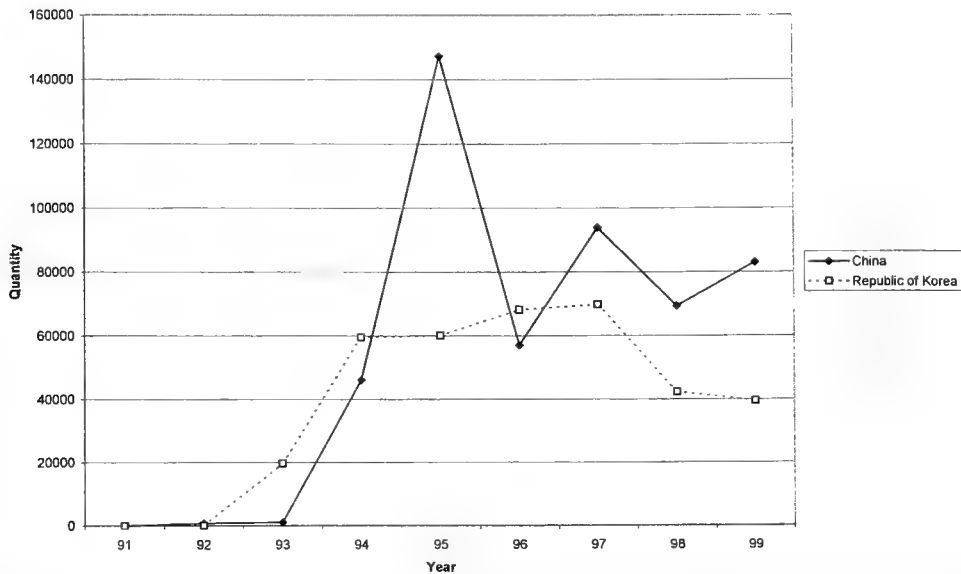
Figure 8. Major direct importers of *Caiman crocodilus fuscus* skins from Colombia 1990-1999



N.B. in this instance the number of skins traded as flanks has been converted to whole skins.

Although Singapore is the major destination, most of the skins are re-exported, particularly to China and the Republic of Korea. Details of this trade is shown in Figure 9.

Figure 9. Other major importers of Colombian *Caiman crocodilus fuscus* skins 1991-1999



Caiman yacare Yacaré

Table 7 shows the fluctuations in exports of *C. yacare* skins from the major producing countries between 1990 and 1999. Trade data for earlier years was presented in the IACTS report 2000. Regarding exports from Bolivia, the 1990 trade was reported as an import by Malta, which is not known to be a major importer of crocodylian skins. The trade in 1997 was reported by both the importer, Italy (12,922 flanks and 9,500 skins), and the exporter (30,052 flanks). The trade in 1998 was only reported by Italy (3,514 flanks) and that in 1999 only by Bolivia (35,000 flanks to Switzerland) although it is possible that the import of these shipments did not occur until 2000. It should be noted that Bolivia planned to establish an export quota for the year 2000 but failed to inform the CITES Secretariat of the quantity of skins that would be involved. Subsequently Bolivia established an export quota of 50,000 skins for 2001, many more than have been exported in recent years.

Paraguay has made regular exports of wild-collected skins since 1994 when 10,932 flanks were exported to Japan. Since then, Paraguay has reported exporting 12,620 skins and 5,173 flanks to Italy and 2,000 skins to Mexico in 1995, 1,450 flanks to Mexico in 1996, 1,006 flanks to Spain in 1997 and 8,890 flanks, also to Spain, in 1998. Paraguay established experimental quotas of 5,000 and 10,000 skins in 1997 and 1998 respectively but none in 1999. No exports were recorded in the 1999 annual report to CITES submitted by Paraguay and, at the time of writing, no importing countries have reported trade in Yacaré involving Paraguay for that year. Paraguay established a quota of 10,000 skins for the year 2000.

Exports from captive-breeding operations in Brazil began in 1989 and, apart from 1993 and 1994 when over 50,500 stockpiled skins were exported, mostly to Panama, only a few hundred skins have been exported annually since then. Of the stockpile that went to Panama, the majority of the skins were re-exported to Mexico in 1996 and 1997.

Table 7. Reported trade in Caiman yacare skins, 1990-1999

Exporter	1990	1991	1992	1993	1994

Bolivia	7457	0	0	0	0
Brazil	265	30	233	7034	43573
Paraguay	0	0	0	3	5466
Total	7722	30	233	7037	49039

Exporter	1995	1996	1997	1998	1999
Bolivia	0	0	15961	1757	17500
Brazil	366	536	4691	295	615
Paraguay	17206	725	503	4445	0
Total	17572	1261	21155	6497	18115

Other Species

There has been no reported exports from origin countries in either 1998 or 1999 of skins of the following species: *Crocodilus intermedius* Orinoco Crocodile, *Crocodilus palustris* Mugger Crocodile, *Alligator sinensis* Chinese Alligator, *Caiman latirostris* Broad-nosed Caiman, *Melanosuchus niger* Black Caiman, *Paleosuchus palpebrosus* Dwarf Caiman, *P. trigonatus* Schneider's Smooth-fronted Caiman, *Gavialis gangeticus* Gharial or *Tomistoma schlegelii* False Gharial. The United States of America reported importing two pre-Convention skins of *Paleosuchus palpebrosus* from Panama in 1998.

Trade in Live Animals

As noted in the IACTS report of 2000, the commercial export of live crocodylians outside of their range States poses a potential threat to the natural biological diversity of the importing countries. The effect these alien animals may have on native populations of crocodylians is inestimable should they establish breeding populations, a serious possibility given suitable environmental conditions and habitat. It was also noted that the continued growth of the crocodylian farming industry would probably mean that such exports would continue for the time being.

Live crocodylians are traded for many reasons. Enthusiasts popularly keep young animals as personal pets; circuses and zoos regularly exhibit such creatures, farms and ranches import animals to supplement their gene pool and some are imported in order to strengthen wild populations. This variety of use, and the limited number of possible purpose codes used in CITES annual reports, means that some conclusions drawn from analysis of CITES data are only tentative. For example, the purpose code 'T' which indicates a commercial transaction would apply equally if the animals were destined for either the pet trade or the farming industry. Below we consider the reported trade on a species by species basis.

Alligator mississippiensis

A close study of the annual reports of importing countries has shown that most of the exports of live alligators reported by the USA (to Singapore in 1996 and to Europe, Japan, Panama and Singapore in 1997) were shipments of skins that had been misreported. In 1981 the USA reported exporting 120

captive-bred animals to Israel, possibly for a crocodile farming operation. Interestingly, the USA reported importing 200 captive-bred individuals in 1986, possibly offspring from the previous export. Exports of large numbers from the USA to the United Kingdom have been reported in 1987 (800), 1993 (200) and 1994 (500) and it is thought these were probably embryos or hatchlings being used for scientific purposes. The USA has reported regular exports of live animals to Japan, Netherlands and Spain and it is thought that most of these were for the pet industry. In 1996 50 live captive-bred animals were exported from USA to China, possibly as breeding stock, and shipments of 1,000 animals in 1995, 1,500 in 1996 and 417 in 1999 have been reported to Mexico, again possibly for breeding purposes.

Alligator sinensis

Since 1997 there have been three exports totalling 83 captive-bred animals from China to Denmark. Although the ultimate purpose of the imports is unknown, it would appear that at least 63 of these animals were re-exported by Denmark to other European Community Member States, particularly Germany.

Caiman crocodilus

The United States of America reported importing 2,475 from **Netherlands Antilles** in 1980 but there have been no other reports of exports from this source.

Brazil exported small numbers of *Caiman yacare* in 1995, 1996 and 1998 but none subsequently.

The United States of America reported importing 23,894 *C. crocodilus* from **Colombia** in 1981 but this appears to be exceptional. Colombia reported exporting 2,000 *C. crocodilus fuscus* to Singapore in 1990 and 3,5000 to the United States of America in 1990, 2,000 in 1997 and 600 in 1998.

The United States of America reported importing several thousand annually from **El Salvador** between 1982 and 1985 but none have been reported subsequently apart from three sent to a zoo in Canada in 1998.

Guatemala reported exporting 4,000 captive-bred *C. crocodilus fuscus* to the United States of America between 1997 and 1999.

Guyana exports several thousand wild-collected animals each year for the pet industry. The main destinations are Europe, Japan and North America.

The United States of America reported importing 2,610 from **Honduras** in 1996 and 300 from **Nicaragua** in 1998.

Panama has never reported exporting live animals although Germany reported importing small numbers in 1978 and 1979. The United States of America reported importing 50,588 in 1979 however this seems rather unlikely. It is more probable that skins were involved.

In 1998 the Netherlands reported seizing 42, and the Russian Federation 29, from **Peru**.

No imports have been reported from **Paraguay** since 1980 when Germany and Switzerland imported a total of 103.

Suriname regularly exports several hundred wild-caught animals for the pet industry. As is the case with Guyana, the main destinations are Europe, Japan and North America.

Trinidad and Tobago reported exporting 56 animals in 1998 but the usual annual level of export is less than ten.

Several thousand animals are exported annually from **Venezuela**, most of which are destined for the North American pet industry. The peak year was 1993 when Venezuela reported exporting 23,340 to the United States of America but a total of 33,280 were reported as exports to the same destination in the course of the next three years. The number fell to 3,450 in 1997 and rose slightly to 4,200 in 1998. In 1999 the figure was only eight but it is interesting that this decline has been matched by exports of 5,500 in 1998 and 11,000 in 1999 to Taiwan, Republic of China. There have also been exports to Thailand that may have been destined for captive-breeding operations. These were 1,240 in 1994, 2,000 in 1996, 1,250 in 1997 and 6,500 in 1999.

Crocodilus johnsoni

There are very few animals in trade but Germany imported six wild specimens from Australia in 1990 for zoo purposes. Germany has subsequently reported exporting four to Switzerland in 1995 and five to the USA in 1997, all reported as captive-bred, so it appears the original animals are being bred successfully.

Crocodilus moreletii

Cuba reported importing two captive-bred animals from Mexico in both 1997 and 1998 for zoo purposes. In 1999 Spain reported importing a further 20 such animals from Mexico, ten of which were apparently destined for a zoo and the remaining ten were simply reported as a commercial import.

Crocodilus niloticus

As noted in the IACTS report for 2000, most of the trade in live specimens of this species has been between range States, particularly Botswana, Mozambique, Namibia, South Africa and Zimbabwe. In addition to the trade reported in IACTS 2000, 1999 saw the reported import by South Africa of 3,827 animals from Botswana (only 1,427 reported by the exporter) and 10,000 ranched animals reported as an export to Zimbabwe by Mozambique.

To the export of seven crocodiles from South Africa to Israel in 1997 and another eight in 1998 can be added a further 900 ranched animals from Kenya in 1999. It would seem probable that these were destined for a farming operation. Namibia exported 266 animals to Spain in 1997 with the purpose listed as 'breeding', and South Africa exported at least 300 animals, half of which originated in Namibia, to Spain in 1998. In 1999 Spain reported importing 62 animals from South Africa, and Kenya reported exporting seven captive-bred animals to Spain listing the purpose of the trade as 'breeding'.

China reported importing 480 crocodiles from South Africa in 1997, a further 3,028 in 1998 and 406 in 1999. It is thought these were for breeding stock, as probably was that of the 591 animals reported as an export to Singapore by Mozambique.

Crocodylus novaeguineae

This species is infrequently reported in trade but Indonesia reported the export of 126 ranched animals to Japan in 1997.

Crocodylus palustris

Sri Lanka reported exporting three captive-bred animals to India for zoo purposes in 1999.

Crocodylus porosus

China reported importing 160 animals from Malaysia in 1993 although it is probable that the shipment occurred in 1994 when Malaysia reported exporting 100 to China. This apparent anomaly arises as a result of the species being listed on CITES Appendix I, for which an import permit is required to be issued before the export permit. Thus the export permit for these animals may have been issued in the year following that of the issuance and reporting of the import permit. Similarly China reported importing 150 animals from Malaysia in 1995 but the export was reported by Malaysia in 1996. In 1997 China reported importing a further 150 animals from Malaysia plus a further 22 in 1998. There was no reported trade between these countries in 1999. Other significant imports reported by China are of 20 from Singapore in 1996 and 170 in 1997. In 1998 Singapore reported exporting 180 animals to China whereas the importing country reported 180 from Thailand in that year. Imports by China in 1999 showed 3,500 captive-bred animals from Thailand for breeding purposes and a further 90 animals of unknown source from Myanmar. As noted in IACTS 2000 the only other transaction of possible significance is an import reported in 1997 by Indonesia of 100 from Singapore, for breeding purposes.

Crocodylus rhombifer

Sweden reported importing 16 animals from Cuba in 1985 and a further 10 in 1986. Since that time Sweden has regularly reported the export of small numbers of captive-bred animals. Since Cuba reported exporting 150 captive-bred animals to Viet Nam for breeding purposes in 1997 the only other reported export from the range State has been two to a zoo in Spain.

Crocodylus siamensis

Imports of this species by China from Thailand show a remarkable progression from 2,128 in 1997 and 5,078 in 1998 to 28,692 in 1999. A further 200 were reported by China with no exporting country listed but it seems likely that this was also Thailand. No annual report for animal species has been received from Thailand for either 1998 or 1999 and an e-mail requesting data on crocodylian exports has been sent to the Thai Department of Fisheries. No response has been received to date (15 June 2001).

Osteolaemus tetraspis

Very small numbers of this species are exchanged annually between zoos and in 1999 South Africa exported 16 captive-bred animals to Spain.

Paleosuchus palpebrosus

Exports of up to 500 animals were imported annually, particularly by Germany and the USA, from Guyana up until 1989. Exports then ceased for several years and began again in 1995. Since that time the numbers have gradually increased towards their former levels but the range of importing countries has expanded to include other European countries, Indonesia, Japan, Mexico and the Philippines. The animals all appear to be for the pet industry.

Paleosuchus trigonatus

As with *P. palpebrosus*, there was trade in small numbers from Guyana up to 1989 and again since 1995. Quantities appear to be less than 300 animals annually.

Trade in other by-products

a. Meat

A major by-product of the crocodylian skin industry is meat, however this commodity is not always reported well. For example, many of the trade records reported by the United States of America in the early 1990's lack an accompanying unit of measurement so it is not possible to determine if the data refer to cans, cartons, kilogrammes or pounds. These records have been omitted in this analysis so it is possible that the totals, especially for the earlier years, are underestimates.

Figure x shows total world exports as reported in CITES annual reports from 1988 to 1999 and indicates that generally the quantity varied between 250 and 500 tonnes annually. However during that period there have been major fluctuations in the countries and species involved. Up until 1992 the major supplier was the United States of America exporting *Alligator mississippiensis* meat, particularly to Taiwan, Republic of China. Since 1993 however, exports of *Crocodylus niloticus* from South Africa, Zambia and Zimbabwe have increased steadily from less than two tonnes in 1992 to nearly 300 tonnes in 1999. Figure y compares the exports from North America with those of Africa.

Other species involved include *C. novaeguinae* and *C. porosus* from Papua New Guinea and although the two species are not always differentiated in the data, it is estimated that exports have averaged in the region of 60 tonnes annually since 1993, the major importer being Australia.

Meat of *C. novaeguinae* was exported in small quantities (less than 10 tonnes annually) by Indonesia between 1992 and 1994 and Australia has been exporting a gradually increasing quantity of meat of *C. porosus* since 1992. This peaked at just over 23 tonnes in 1998 but fell back to 14 tonnes in 1999.

Venezuela exported irregular quantities of meat of *Caiman crocodylus crocodylus* from 1989 until 1997 with a peak of nearly 45 tonnes in 1993, and Colombia exported small quantities of *C. crocodylus fuscus* between 1994 and 1997. There has been no reported trade in meat from these taxa subsequently.

Of interest in recent years is trade in two Appendix-I species, namely the imports reported by China of 45 tonnes and 19 tonnes of meat of *Crocodylus siamensis* from Thailand in 1998 and 1999 respectively, and the export reported by Mexico in 1999 of 3.5 tonnes of *C. moreletii* to Japan.

As stated earlier, meat from Papua New Guinea has mainly been imported by Australia however Australia's annual report to CITES shows very little being re-exported. The reason for this is currently unknown to the author. Traditional markets for crocodylian meat are Far Eastern countries, particularly China, Hong Kong, Japan and Taiwan, Republic of China. The United States of America reported exporting at least 1000 tonnes of alligator meat to the latter country between 1990 and 1994. Exports to Taiwan have been few since then. Japanese imports peaked at over 110 tonnes in 1994 but appear to have decreased subsequently, however it should be noted that the Japanese reports for 1998 and 1999 were not available for analysis. Chinese imports appear to have begun in 1993 when nearly 23 tonnes was involved, and have increased to 69 tonnes and 71 tonnes in 1998 and 1999 respectively, the main

species being *Crocodylus niloticus* and *C. siamensis*. Hong Kong trade also appears to have begun in 1993 and has increased to over 185 tonnes in 1999. The main species involved however were *C. niloticus* and *A. mississippiensis*. European imports of crocodylian meat were around eight tonnes in 1990 and 1991, increased to over 20 tonnes in 1992 and 1993, were over 30 tonnes for each of 1994 and 1995 and have increased to between 60 and 70 tonnes a year since then.

b. Teeth

Teeth and, to a much lesser extent, claws of crocodylians are used as jewellery and as decoration on garments such as hats. Some of this fashion may have been popularised by the 'Crocodile Dundee' films that featured such items. The main importing country for crocodylian teeth is Australia and imports of as many as 75,000 teeth in a single year (1994) have been reported. The major supplier of these goods is Papua New Guinea although small quantities were reported by Australia from South Africa (3,100 teeth of *Crocodylus niloticus*) in 1996 and the United States of America (1,616 teeth of *Alligator mississippiensis*) in 1999. The main species involved is *C. porosus* and the majority of the teeth are from ranched or captive-bred individuals.

Infractions of CITES

Table 8 was provided by the CITES Secretariat and is an output from the TIGERS enforcement database. It summarises all available information on seizures of crocodylians from August 1997 to February 2001. Most of the reported seizures involve small numbers of manufactured items, however there are a number of live animals from South America destined for Eastern Europe and the Russian Federation.

There appears to be a large number of seizures reported by Austria and Poland but this simply reflects the proficiency of the Customs officers in those countries at intercepting returning tourists.

The most significant entry perhaps, is the seizure of an unknown quantity of skins in Zimbabwe. This was reported in the SADC Bulletin as follows:

"Zimbabwe Department of National Parks and Wildlife Management officials recently confirmed that they found a Bulawayo-based Indonesian company with hundreds of crocodile skins, which allegedly entered into the country illegally. A Zimbabwean daily newspaper, the Herald, reported that the skins were in containers labelled "hippo skins". Complex procedures must be followed when importing wildlife products. Sources alleged that senior Zimbabwe Customs Department officials, together with those from the Department of National Parks might have been heavily involved in the scam."

Recent information (J. Hutton, *pers comm*) indicates that the skins had actually been imported legally for tanning.

Table 8. Seizures of Crocodylians from the TIGERS database

Date	Species	Specimens	Country of Export/Re-export	Country of import or destination	Country of discovery
23/08/1997	<i>Palaeosuchus trigonatus</i>	18 live	Peru	U.S.A.	Peru
25/09/1997	<i>Palaeosuchus palpebrosus</i> <i>Caiman crocodilus</i>	4 live 11 live	Peru	Czech Rep.	Netherlands
03/04/1998	<i>Caiman latirostris</i>	4 live	Peru	Russian Fed.	Russian Fed.
20/02/1997	<i>Crocodylus siamensis</i>	1 key ring	Thailand	Italy	Italy
17/03/1997	<i>Osteolaemus tetraspis</i>	5 handbags	Nigeria	Italy	Italy
28/09/1998	Crocodylidae spp.	< 100 pairs shoes	U.S.A.	Italy	Italy
18/01/1998	Crocodylidae spp.	2 handbags	Nigeria	Italy	Italy
24/03/1998	Crocodylidae spp.	<5 handbags	Mali	Italy	Italy
20/01/1998	Crocodylidae spp.	1 whole skin	Benin	Italy	Italy
31/08/1998	<i>Caiman crocodilus</i> <i>Caiman latirostris</i>	9 live 13 live	Peru	Russian Fed.	Russian Fed.
22/04/1999	<i>Crocodylus porosus</i>	1 product	Viet Nam	Austria	Austria
21/07/1999	<i>Crocodylus porosus</i>	9 live			Indonesia
28/07/1999	Crocodylidae spp.	1 live	U.S.A.	Austria	Austria
21/08/1999	<i>Alligator mississippiensis</i>	2 skulls	U.S.A.	Austria	Austria
16/09/1999	<i>Caiman crocodilus</i>	1 product	Egypt	Austria	Austria
10/09/1999	<i>Crocodylus acutus</i>	22 products	Cuba	Slovakia	Austria
14/09/1999	<i>Alligator mississippiensis</i>	2 skulls	U.S.A.	Austria	Austria
23/12/1999	<i>Alligator mississippiensis</i>	1 skull	U.S.A.	Austria	Austria
16/09/1999	<i>Crocodylus niloticus</i>	4 live	Egypt	Italy	Italy
17/06/1998	<i>Crocodylus niloticus</i>	5 handbags	Senegal	Italy	Italy
01/12/1998	<i>Crocodylus niloticus</i>	12 live	Egypt	Jordan	Jordan
02/09/1999	<i>Crocodylus niloticus</i>	1 head	Sweden	South Africa	South Africa
18/12/1999	<i>Crocodylus niloticus</i>	1 product	Nigeria	Austria	Austria
05/01/2000	Crocodylidae spp.	1 skin	U.S.A.	Austria	Austria
07/01/2000	<i>Crocodylus niloticus</i>	4 handbags 6 prs shoes	Nigeria	Poland	Poland
09/01/2000	<i>Crocodylus niloticus</i>	1 skin	Mauritius	Austria	Austria
12/01/2000	<i>Caiman crocodilus</i>	1 pr shoes 1 handbag 1 purse	Thailand	Poland	Poland
12/01/2000	<i>Caiman crocodilus</i>	1 pr shoes 1 wallet 1 purse	Thailand	Poland	Poland
12/01/2000	<i>Crocodylus siamensis</i>	1 stuffed animal	Thailand	Poland	Poland
02/02/2000	Crocodylidae spp.	1 skin	United Kingdom	Austria	Austria
02/02/2000	Crocodylidae spp.	1 skin	South Africa	Austria	Austria
13/02/2000	Crocodylidae spp.	1 skin	Mauritius	Austria	Austria
07/03/2000	<i>Palaeosuchus palpebrosus</i>	Live	Unknown	U.S.A.	U.S.A.

		(unknown quantity)			
12/04/2000	Crocodylidae spp.	9 products	Nigeria	Italy	Italy
10/05/2000	<i>Caiman crocodilus fuscus</i>	6 products	Germany	Poland	Poland
17/05/2000	Crocodylidae spp	1 product	South Africa	Austria	Austria
29/05/2000	Crocodylidae spp	2 products	Switzerland	Poland	Poland
30/05/2000	<i>Crocodylus porosus</i>	5 products	Australia	Austria	Austria
19/07/2000	<i>Caiman yacare</i>	1 skull	Argentina	Austria	Austria
15/08/2000	<i>Osteolaemus tetraspis</i>	1 stuffed	Nigeria	Poland	Poland
30/08/2000	<i>Crocodylus niloticus</i>	1 handbag	Germany	Poland	Poland
27/09/2000	Crocodylidae spp.	1 hatband	Australia	Poland	Poland
23/10/2000	Crocodylidae spp.	2 handbags	Ghana	Poland	Poland
16/11/2000	<i>Crocodylus niloticus</i>	1 head	South Africa	Poland	Poland
02/12/2000	<i>Caiman crocodilus</i>	1 stuffed	Canada	Poland	Poland
21/12/2000	Crocodylidae spp.	7 skulls	Papua New Guinea	Poland	Poland
28/12/2000	<i>Alligator mississippiensis</i>	1 belt	Germany	Poland	Poland
03/01/2001	Crocodylidae spp.	Skins (unknown quantity)	Unknown	Zimbabwe	Zimbabwe
16/02/2001	<i>Crocodylus rhombifer</i>	1 stuffed animal	Russian Federation	Germany	Poland

It should be noted that although information on seizures are supposed to be recorded in CITES annual reports, the relevant authorities involved, i.e. the Customs officers making the seizures and the CITES Management Authorities producing the annual reports seldom liaise closely. In addition the data recorded by Customs rarely allows the goods to be identified at the species level.

Discussion and recommendations

The overall volume of world trade in classic crocodylian skins and caimans from 1995 to 1999 is summarised in Table 9 and based, wherever possible, on country of export data. It has been noted in previous IACTS reports that the absence of CITES annual reports from key exporting and importing countries has led to a high degree of uncertainty, however the situation has improved greatly over the past two years. For example the measures passed at the 11th meeting of the Conference of the Parties to CITES have resulted in the appearance of much of the missing data from producer countries and access to export permits held by the CITES Secretariat have allowed better verification of those data. It is very unfortunate that for one species, *Crocodylus siamensis*, the main producer and importer country reports are missing, namely those from Thailand and Japan

Exports of some of the classic skins, particularly *Alligator mississippiensis* and *Crocodylus niloticus*, appear to be increasing steadily but the situation with other taxa, e.g. *C. johnsoni*, *C. novaeguineae* and *C. porosus* is far less stable. As noted above, the situation regarding trade in *C. siamensis* is unknown but is thought to be increasing. Trade in caiman skins, particularly *Caiman crocodilus fuscus* from Colombia, is increasing at the expense of wild-collected skins of *C. crocodilus crocodilus* from Venezuela. Overall the total number of skins entering international trade in 1999 appears to have been in excess of 1,200,000 and suggests a strong recovery from the slump in trade in 1996 and 1997.

Table 9. Reported trade in crocodylian skins 1995-1999

	1995	1996	1997	1998	1999
<i>Alligator mississippiensis</i>	185,929	163,936	198,649	206,620	239,519
<i>Crocodylus acutus</i>	0	0	0	0	0
<i>C. cataphractus</i>	0	0	0	0	0
<i>C. intermedius</i>	0	0	0	0	0
<i>C. johnsoni</i>	3,132	1,641	194	309	45
<i>C. moreletii</i>	0	20	146	120*	2
<i>C. niloticus</i>	84,987	67,528	81,987	69,715	120,279
<i>C. novaeguineae</i>	19,556	14,234	33,012	23,491	22,191
<i>C. palustris</i>	0	0	0	0	0
<i>C. porosus</i>	21,298	19,651	18,376	23,823	15,701
<i>C. rhombifer</i>	99	40	0	2	0
<i>C. siamensis</i>	4,372	3,186	5,452	6*	501*
<i>C. siamensis/porosus</i>	0	0	0	0	0
<i>Gavialis gangeticus</i>	0	0	0	0	0
<i>Tomistoma schlegelii</i>	0	0	0	0	0
subtotal	319,383	270,236	337,816	324,086	398,238
<i>Caiman crocodilus crocodilus</i>	48,390	26,346	37,084	35,580	16,441
<i>Caiman crocodilus fuscus</i>	770,609	656,585	475,053	691,384	767,779
<i>Caiman yacare</i>	17,572	1,261	21,115	6,497	18,115
subtotal	836,571	684,192	533,252	733,461	802,335
Grand total	1,155,954	954,428	871,068	1,057,547	1,200,573

* = data deficient

We have noted in earlier IACTS reports that there are serious problems in reaching realistic estimates of trade levels because some countries still report on the basis of permits issued rather than actual trade. This situation has not improved and it is still the case that most CITES Parties fail to even report the basis on which their reports are compiled.

We have previously noted that overestimates caused by exports from one year being reported as imports the following year can be largely overcome by only taking exporters' data into account, however in the absence of annual reports from producer countries the only recourse is to use importers' data. To date only about ten Parties have adopted the recommended permit number format from CITES Resolution Conf. 10.2 that would eliminate the problem as the permit number identifies the year of permit issuance. However it has already been noticed that although countries may be using the standard permit number format, they do not always appear in that format in annual reports, e.g. the year code may be missed out.

Standardisation of the terminology used to describe parts of crocodylian skins has been recommended in the past as this may reduce the danger of double-counting and subsequent overestimation of trade levels. We continue to recommend this standardisation. We stress that manufactured products should be

reported simply as LPL (large leather product) or LPS (small leather product) and are concerned that some countries, notably the Republic of Korea, may be recording such items as whole skins.

Similarly, CITES Parties should pay greater attention to reporting the source of the material. It has already been noted above, in the section on *Alligator mississippiensis*, that ranched animals are being reported as ones bred in captivity. The number of possible source codes is perhaps too many as it includes C = captive-bred, D = Appendix-I species bred in captivity for commercial purposes, F = animals born in captivity that do not fulfill the definition of 'bred in captivity' in Resolution Conf. 10.16, O = pre-Convention material, R = specimens originating in a ranching operation, U = unknown and I = seized material. For crocodylians it may be possible, at least for analytical purposes, to combine C, D and F to cover farming operations, and O and U to cover unknown source. The problem, as we noted above, is the confusion that can arise when ranched material is reported as captive-bred.

It has been noted that some caiman producer countries are now establishing export quotas, e.g. Bolivia has an export quota of 50,000 skins of *Caiman yacare* in 2001 and it is thought that Paraguay may be considering similar measures. If these quotas are established purely for captive-bred specimens the conservation value for the country's wild population of crocodylians is doubtful. Simple trade data becomes available from these operations but there is no information on the effect that they have on wild populations. It is possible that pressure on wild populations may be reduced as hunting pressure lessens but on the other hand, purely captive breeding operations may allow a loophole that leads to laundering of wild-hunted skins. We recommend that countries allowing large-scale farming operations should establish strict monitoring and management programmes for their wild crocodylian populations.

The following recommendations made in the IACTS report of 2000 remain valid:

It is **recommended** that *the CITES Secretariat and the Chairman of the Standing Committee should contact Parties in June of each year to remind them of their obligations under Article XIII, paragraphs 6 and 7.*

UNEP-WCMC **recommend** that *Parties adopt the recommendations of Resolution Conf. 10.2 concerning the format of permit numbers as soon as possible.*

UNEP-WCMC would **recommend** that *wherever possible, Parties report the actual quantities of skins being traded.*

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